Journal of Research on the Lepidoptera 5 (4): 243-247, 1966

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LIFE HISTORIES OF

THREE WESTERN SPECIES OF *POLITES*

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The early stages of three western species of *Polites*, one of which is very common, have apparently not been studied thoroughly. This paper discusses the life histories of *P. sabuleti* (Bdv.), *P. sonora* (Scud.) and *P. mardon* (Edw.).

METHODS OF REARING

It was found that females would oviposit readily in the small glass containers that season salt, dill salt and various other seasonings come in. These are about 1½ x 4 inches in size and they have perforated plastic caps. The holes in the tops prevent too much moisture from accumulating but do not allow the skippers to escape. A small piece of absorbent material saturated with a sugar solution can be placed inside, held at the top of the bottle by the cap, on which the females will feed. Oviposition occurs either on grass placed in the bottle or on the sides of the bottle. Females will live for three of four days under these conditions and may deposit as many as 25 eggs during this time.

Newly hatched larvae were put into salve boxes with pieces of grass which was renewed daily. A damp piece of paper towelling in the bottom kept the grass from drying out rapidly. Larvae of these skippers develop slowly and when they are fairly large, they may be transferred to the same type of bottles used for oviposition, where they will conclude their development and pupate. They usually spin a loose cocoon among the pieces of grass in which pupation takes place.

POLITES SABULETI

This species occurs from Washington to Arizona and east to Colorado. In the Yakima Valley, Washington, there are two broods, one flying in May and June and the other in August and September. *Sabuleti* seems almost to have become domesticated

in that it has adopted the lawns in cities and towns as its principal habitat. In the Yakima Valley, at least, it is seldom seen elsewhere. In this habitat the larvae feed on lawn grass, which is usually a mixture of Kentucky bluegrass and other species, and the adults feed on the blossoms of wild morning glory, dandelion and other garden flowers. Comstock (1927) states that the larvae "feed on *Carex filifolia* and *Trifolium monanthum.*" The former is a sedge occurring from British Columbia and Saskatchewan to California and Texas, and the latter is a clover occurring only in the Sierra Nevada Mountains of California and Nevada. I tried feeding larvae of *sabuleti* on the sedge and also on various clovers, but they would not eat any of these plants. Since the normal food of *Polites* is grass, it is reasonable to expect this to be true of *sabuleti.*

Duration of the egg stage was 7 days at room temperature. The larval period lasted 35 to 50 days and the pupal period 10 to 13 days. Eggs deposited about May 10 produced adults July 19 to 26, and eggs deposited May 21 produced adults July 21 to 26. Hibernation of the second brood is in the pupal stage.

DESCRIPTION

Polites sabuleti

EGG. — Basal diameter 1.0 mm, height 0.8 mm. Color light bluish green, darker at micropyle. Dome-shaped, base flattened. Finely reticulate.

LARVA. — FIRST INSTAR. — Head width 0.5 mm, shiny black. Body length 2.0 mm, light cream; cervical shield narrow, dark brown, a few setae.

SECOND INSTAR. — Head width 0.8 mm, shiny black with numerous fine setae. Body length 4 mm, greenish with many small brown dots, each bearing a seta.

THIRD INSTAR. — Head width 1.1 mm, color and setae as before. Body length 7.0 mm increasing to almost 10 mm, grayish green with many brown dots and brown setae of various lengths; dark median line and a distinct dorso-lateral line; cervical shield black.

FOURTH INSTAR. — Head width 1.6 mm, color as before but with two whitish streaks anteriorly and a shorter one laterally. Body length 10.0 mm growing to 15.0 mm, grayish brown with dark median line, lighter ventrally; suranal plate becoming pronounced, light colored; thoracic legs black; spiracles on first segment large, black, others smaller, brown.

FIFTH INSTAR. — Head width 2.5 mm, color as before, punctate and with fine setae. Body length 18.0 to 22.0 mm, ground color light gray with numerous small brownish patches giving it a griseous appearance, lighter ventrally; median line brown but not sharply defined; numerous fine setae; cervical shield black; suranal shield white with a dorsal and two lateral black streaks; spiracles dark shiny brown; thoracic legs black; prolegs gray.

PUPA. — Length 16 mm, width at thorax 4 mm; color greenish with some brown on head, tips of legs and last two abdominal segments; numerous fine setae dorsally and a few laterally and ventrally on the abdomen. Cremaster short, not emarginate, with a single cluster of hooks.

POLITES SONORA

This is a common species occurring from British Columbia (Llewellyn Jones, 1951) to California and east to Montana, Wyoming and Colorado. In the Northwest, I have taken it on the prairies south of Olympia, Washington, and in Oregon along the upper Rogue River in Douglas County and at Camp Sherman in Jefferson County. The larval foodplant has not been determined, but *Festuca idahoensis* Elmer[1] is very common on the Washington prairies, it occurs throughout the range of *sonora,* and it is probably at least one of the foodplants. The larvae were easily reared on lawn grass and they also fed on *F. idahoensis.* The adults feed on various flowers growing in the habitat.

Duration of the egg stage was 8 days at room temperature. Larvae hatching at the end of June were carried through until the end of July, when they had reached the third instar. No larvae were reared beyond this stage.

[1]*DDetermined by Professor Marion Ownbey, Washington State University, Pullman.*

DESCRIPTION

Polites sonora

EGG. — Basal diameter 1.0 mm, height 0.7 mm. Color very light green. Spherical with small flattened base, not flanged. Finely reticulate.

LARVA. — FIRST INSTAR. — Head width 0.6 mm, shiny black. Body length 1.75 mm, creamy white, a few setae on last two segments; cervical shield black.

SECOND INSTAR. — Head width 0.75 mm, black. Body length 3-5 mm, greenish, covered with numerous minute brown dots; cervical shield black.

THIRD INSTAR. — Head width 1.0 mm, solid black, punctate. Body length 5 mm, grayish green with many fine black setae and a few longer ones on posterior segment.

POLITES MARDON

Polites mardon was described in 1881 by W. H. Edwards (Edwards, 1881) from three males and three females "taken at Mt. Hood" in Oregon by H. K. Morrison. It has been scarce, but has since been taken near Tenino, Thurston County, Washington, by D. L. Bauer, at Grand Mound, also in Thurston County, by J. F. Gates Clarke, on the south slope of Mt. Adams, Yakima County, Washington, at about 6500 feet elevation by Stanley G. Jewett, and on the open grassy slopes of Signal Peak, Yakima County, Washington, at 4800 to 5000 feet by the writer. It has also been reported from Seattle. A search of the area about Tenino and Grand Mound on June 6 and 20, 1966, by the writer did not turn up any *mardon*, although *sonora* was found there at that time. It is possible that *mardon* flies earlier. The Mount Adams and Signal Peak locations are about 55 miles north and 70 miles northeast of the type locality, respectively.

Festuca ovina L.[2] is abundant on Signal Peak, as is *Bromus carinatus* Hook. & Arn.,[2] and one or both of these grasses may be the native foodplant. The larvae feed readily on lawn grass, however. The adults feed on the blossoms of dandelion and wallflower (*Erysimum capitatum* (Dougl.)). Males are often seen resting on rocks or bare patches of soil.

Duration of the egg stage was 6-7 days at room temperature. The larval period yasted about three months. Hibernation is in the pupal stage.

DESCRIPTION

Polites mardon

EGG. — Basal diameter 1.0 mm, height 0.8 mm. Color cream becoming yellow-orange. Spherical, base flattened, not flanged. Very finely reticulate.

LARVA. — FIRST INSTAR. — Head width 0.5 mm, light brown. Body length 3.0 mm, very light brown with transverse rows of darker brown dots and a few setae; cervical shield black.

SECOND INSTAR. — Head width 0.75 mm, color as before. Body length 5.0 mm, color as before.

THIRD INSTAR. — Head width 1.0 mm, dark brown with a darker narrow dorsal stripe. Body length 6.5 mm, color as before.

FOURTH INSTAR. — Head width 1.5 mm, color as before. Body length 8.0 mm, color as in third instar but with a darker dorsal stripe.

[2]*Determined by Professor Marion Ownbey.*

FIFTH INSTAR. — Head width 2.0 mm, black with two lighter dorsal stripes, surface covered with small pits. Body length 16.0 mm, tapering anteriorly; color light gray, sprinkled with numerous dark brown dots of irregular shape and varying size; a black median stripe; cervical shield black, suranal shield with dark margin and three dark spots just behind anterior edge; ventral surface same color as dorsal; spiracles and thoracic legs black.

PUPA. — Length 15.0 mm, width at thorax 4.0 mm. Smooth without protuberances. Color ashy gray with some light brown areas on abdominal segments and "shoulders" of wings; dorsum of thorax darker gray, darker spots of various sizes scattered over thorax, abdomen and wings; eyes rich brown, darker posteriorly; many fine, light brown setae on abdomen and several tufts of them about the eyes and elsewhere on the head. Cremaster acute, laterally emarginate, hooks many, in dense cluster, scorpioid.

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